



TACKLING THE BURDEN OF PILLS IN HIV INFECTED SUBJECTS WITH MULTIPLE CHRONIC CONDITIONS

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KEYWORDS :

Polypharmacy, which is the practice of taking multiple medications—typically five or more—to manage a patient's diseases and health conditions has become an increasingly alarming issue in modern medicine. Polypharmacy is arguably one of the most vexing prescribing issues they confront on a daily basis. Polypharmacy is driven by a combination of factors, including people living longer, the increasing prevalence of chronic diseases such as diabetes or HIV (human immunodeficiency virus) infection and the increasing availability of drugs to treat many of these diseases (1-6).

Data from the National Center for Health Statistics (NCHS) have demonstrated that older patients use the greatest number of prescription drugs. According to a 2015 NCHS report, from 2009 to 2012 3% of adults 18 and 44 years old took five or more prescription drugs during the prior month, compared to 16% of those aged 45 to 64. Among people age 65 and over nearly 40% took greater than five drugs. Physicians' efforts to better manage polypharmacy are severely impeded by fragmentation of care, the lack of interoperability among electronic health record (EHR) systems, and challenges that arise as patients take supplements and other tablets that complicate their course of treatment. The battle to cope with polypharmacy at many medical practices is overwhelming. Managing polypharmacy and ensuring that every medication a patient takes is appropriate and is not having harmful interactions with other drugs is a key aspect of a physician's responsibility.

Because of the high prevalence of comorbid diseases in the higher aged, many elderly people are treated with multiple medications. The proportion of older adults exposed to polypharmacy (usually defined as concomitant prescription of ≥ 5 drugs) has increasing in the last years. This increase has several reasons, such as the rising use of cardioprotective and antidepressant medications and probably also the promotion of guidelines recommending multiple drug therapy to achieve targets such as blood pressure or glycemic control. Approximately 20% to 40% of adults aged 65 and older in developed countries are prescribed ≥ 5 medications. Whereas polypharmacy is driven by comorbidity and may be beneficial for many patients, the number of medications used is the highest risk factor for prescribing problems. Polypharmacy results in medication nonadherence and increases the risk of adverse drug reactions (ADE), drug-drug interactions, medication errors and of using potentially inappropriate medications (PIMs). Several studies showed that polypharmacy and inappropriate medication use are associated with adverse health outcomes, including mortality, hospitalization, falls and cognitive impairment. Subjects on ART (antiretrovirals) are increasingly facing the problem of multiple medications use.

Improved survival achieved by many patients with HIV/AIDS has complicated their medical care as increasing numbers of comorbidities leads to polypharmacy, increased pill burdens, and greater risks of drug-drug interactions potentially compromising antiretroviral treatment (ART). Today, about a third of all people living with HIV are 50 and older, thanks to combination antiretroviral therapy (ART) that has transformed the infection from a death sentence into a chronic, manageable condition. By 2030, experts predict, half of all HIV-infected individuals will be 50 or older.

With age, however, comes a host of chronic diseases and medical

conditions such as diabetes, hyperlipidemia, hypertension, depression, anxiety, and heart disease that often require multiple medications to manage. Combined with several ART drugs, this polypharmacy can increase the risk of adverse drug reactions, falls and head injuries, cognitive decline, urinary incontinence, and nonadherence due to increased pill burden (2). In people with HIV, it may also affect the outcomes of ART therapy and, together with nonadherence, lead to higher viral loads and drug resistance

The most common contraindicated combinations are as follows:

- Proton pump inhibitor (PPI) with atazanavir or nelfinavir
- Protease inhibitor (PI) with simvastatin or lovastatin
- Protease inhibitor with contraindicated benzodiazepines

The most common combinations with evidence of interaction are:

- H₂-receptor antagonists and/or PPIs with PIs
- Erectile dysfunction agents with PIs and non-nucleoside reverse transcriptase inhibitors (NNRTIs)
- Antidepressants (bupropion, sertraline, and paroxetine) with PIs and NNRTIs
- Lithium with atazanavir

Variables associated with contraindicated prescriptions included older age, anxiety, dyslipidemia, higher daily non-ART medication burden, and taking a PI.

The need of the hour for physicians is to evaluate a patient's entire medication list carefully and also to ask patients what they are taking currently. For instance, many acid-reducing medications are available over-the-counter, so patients may not include them on medication lists.

Medication reconciliation is key. Singlehandedly managing the complex polypharmacy of HIV-infected may not be realistic. Here, Dr. Shashank Kraleti has introduced a pioneering patient-facing mobile health application that has revolutionized the pill burden of HIV infected patients. This app has been welcomed by both the physicians and the patients, coming across as easy to ease in the age of smartphone communication. My Meds (mymeds.net), a simple app, has the ability to take images of the pills and transmit to the consultant as a portable document format. The app is downloadable freely from Google PlayStore. Such empowerment of the subjects is a key step in dealing with polypharmacy, which is a scourge throughout the nation and globe. Not only for ART medications, the app is useful to any patient using a number of medications. There is no need for registering the names of medications in memory. Rather, the app also has the ability to set the patient on a reminder every time they need to take a pill or need a prescription refill. This thoughtful and elegant innovation of Dr. Kraleti also portrays his deep understanding of the practical problems faced by the patients. Dr. Kraleti, currently the Program Director and Jack W Kennedy Professor of Family Medicine at the University of Arkansas for Medical Sciences (UAMS) in Little Rock, is a globally known leader in healthcare communication. He has long served on the Board of Advisors for Talk2All (Talk2All Inc, an Android app), an innovative mobile application that can translate numerous languages in real-time and one which has been widely adopted in hospital settings receiving international patients with limited knowledge of spoken English. The utility of this app is further

exemplified by its usefulness in the ability to generate for performing randomized controlled clinical trials to formulate more specific guidelines in the face of ever-increasing number of antiretroviral therapies. This innovation is another feather in the cap to enhance patient-doctor relationship and enhancing compliance with medications and preventing dangerous drug interactions and side effects and falls and fractures in the elderly, especially in areas like HIV infections which are current international pandemics.

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